

R E M A R K S

This is in response to the Office Action that was mailed on December 17, 2002. Claims 1-16 and 18 are amended without change of scope in order to place them into better condition for examination on their merits. Applicants reserve the right to pursue the inventions of claims 17 and 19-35 in one or more divisional applications. Claims 1-16 and 18 remain in this application.

In order to be responsive to the requirement for restriction, Applicants elect the invention identified by the Examiner as Group I. However, Applicants respectfully traverse the requirement for restriction as it is set forth by the Examiner. Even though this application was filed with only 35 claims, the Examiner has required restriction amongst 18 different invention groups! This 18-group restriction requirement places an unreasonable burden on the Applicants herein. Applicants respectfully request that the requirement for restriction as set forth in the outstanding Office Action be withdrawn.

Three main inventive themes are claimed in this application:

- (1.) Claims 1-16 and 18 are drawn to reaction (oxidation) of a substrate with an imide catalyst and subsequent separations A1, A2, or B;
- (2.) Claims 17 and 19-28 are drawn to reaction (oxidation) of a substrate with an imide catalyst and a (metal) cocatalyst and subsequent separations C, D, or E; and
- (3.) Claims 29-35 involve regeneration of active imide catalyst.

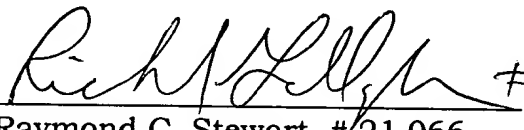
It is respectfully submitted that it would not be unduly burdensome on the Examiner to examine claims 1-16 and 18 together in this application. Applicants respectfully request that the requirement for restriction be reformulated to be amongst Groups (1.), (2.), and (3.) as set forth hereinabove.

Appl. No. 09/980,588

The Examiner is invited to contact Richard Gallagher (Reg. No. 28,781) at (703) 205-8008 with any questions.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fee required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,
BIRCH, STEWART, KOLASCH & BIRCH, LLP

By  #28,781
Raymond C. Stewart #21,066

RCS/RG
2224-0194P

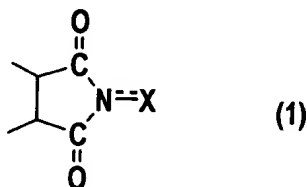
P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Attachments

Marked up copies of claims showing amendments:

1.(amended) A process for preparing [separating] a reaction product [and an imide compound from a reaction mixture obtained by] which comprises the steps of

reacting a substrate in the presence of [the] an imide compound having an imide unit represented by the following formula (1):



wherein X represents an oxygen atom, a hydroxyl group or an acyloxy group, thereby forming a reaction mixture, and subsequently

separating said reaction product and said imide compound from said reaction mixture by [which comprises]:

(A1) solvent-crystallizing [a solvent-crystallization step for crystallizing] the imide compound from said reaction mixture with at least one solvent selected from the group consisting of a hydrocarbon, a chain ether and water, or

(A2) cooling-crystallizing [a cooling-crystallization step for crystallizing] the reaction product from said reaction mixture by cooling, or

(B) [an extraction step for] distributing the reaction product into a phase of a water-insoluble solvent and distributing the imide compound into a phase of an aqueous solvent, respectively, by using [the] an aqueous solvent containing at least water and [the] a water-insoluble solvent separable from the aqueous solvent.

2. (amended) The process of [A separating process according to] claim 1, wherein[, in the] separation of said reaction product is by solvent-crystallization step (A1), in which the hydrocarbon is an aliphatic hydrocarbon having 4 to 16 carbon atoms or an alicyclic hydrocarbon having 4 to 16 carbon atoms, and the chain ether is a diC₁₋₆alkyl ether or a C₁₋₆alkyl C₆₋₁₀aryl ether.

3. (amended) The process of [A separating process according to] claim 2 [1], wherein the imide compound is an aromatic imide compound, and the reaction product is an oxidation reaction product of an alicyclic hydrocarbon or an alicyclic alcohol and is soluble in the solvent for crystallization in the solvent-crystallization step (A1).

4. (amended) The process of [A separating process according to] claim 1, wherein[,] separation of said reaction product is by cooling-crystallization step (A2), and a solvent which is a poor solvent for the reaction product and is a good solvent for the imide compound is used as a reaction solvent in the cooling-crystallization step (A2).

5. (amended) The process of [A separating process according to] claim 4 [1], wherein a C₁₋₄carboxylic acid, a C₁₋₁₀alcohol or a water-containing solvent is used as a reaction solvent in the cooling-crystallization step (A2).

6. (amended) The process of [A separating process according to] claim 4 [1], wherein the reaction product is an oxidation reaction product of an alicyclic hydrocarbon or a methyl group-containing aromatic compound in the cooling-crystallization step (A2).

7. (amended) The process of [A separating process according to] claim 4 [1], wherein the imide compound is an aromatic imide compound and the reaction product is an aliphatic carboxylic acid having 6 or more carbon atoms or an aromatic carboxylic acid in the cooling-crystallization step (A2).
8. (amended) The process of [A separating process according to] claim 1, wherein[, in the] separation of said reaction product is by extraction step (B), and wherein the aqueous solvent is water.
9. (amended) The process of [A separating process according to] claim 8 [1], wherein, in the extraction step (B), the aqueous solvent contains a base.
10. (amended) The process of [A separating process according to] claim 8 [1], wherein in the extraction step (B), the reaction mixture is subjected to hydrolysis treatment in advance of separation of the reaction product and the imide compound.
11. (amended) The process of [A separating process according to] claim 10, wherein the reaction mixture is hydrolyzed by using an aqueous solvent containing a base.
12. (amended) The process of [A separating process according to] claim 8 [1], wherein, in the extraction step (B), the water-insoluble solvent is at least one member selected from the group consisting of a hydrocarbon and an ether.
13. (amended) The process of [A separating process according to] claim 8 [1], wherein the water-insoluble solvent is used as a reaction solvent in the extraction step (B).

14. (amended) The process of [A separating process according to] claim 8 [1], wherein the reaction product is an oxidation reaction product of an alicyclic hydrocarbon, or an aromatic hydrocarbon having a methyl or methylene group, and is water-insoluble in the extraction step (B).

15. (amended) The process of [A separating process according to] claim 8 [1], wherein the reaction product is a cyclic alcohol, a cyclic ketone, an aldehyde having a cyclic hydrocarbon group or a carboxylic acid having a cyclic hydrocarbon group in the extraction step (B).

16. (amended) The process of [A separating process according to] claim 1, wherein the reaction is conducted in the presence of a solvent, and the reaction mixture is subjected to a condensation step to separate the solvent in advance of separation of the reaction product and the imide compound.

18. (amended) The process of [A separating process according to] claim 1, wherein the imide compound is an oxidation catalyst for oxidizing the substrate, and the reaction product is an oxidation reaction product corresponding to the substrate.